A GIS Software Toolkit for Converting NASA HDF-EOS Data Products to GIS and Other Geospatial Formats, Phase I

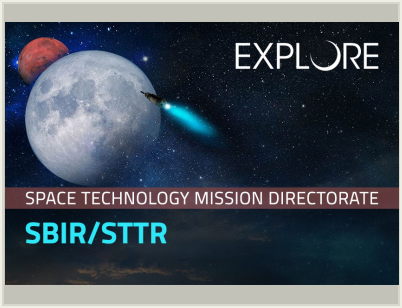
Completed Technology Project (2009 - 2009)

Project Introduction

Aniuk Consulting, LLC, proposes to create a GIS software toolkit for easily converting NASA HDF-EOS data into formats that can be readily used within a Geographic Information System (GIS) or other geospatial software programs. The Hierarchical Data Format (HDF) is a widely used scientific data format and serves as the standard format for NASA EOS products. The HDF-EOS toolbar will allow a user to reformat, re-project, and perform geospatial operations on NASA EOS data. This toolkit is designed to improve upon current HDF conversion tools and will be packaged as a software extension for ESRI's ArcGIS 9.3 suite of products. In addition, we will assess the feasibility of extending the HDF-EOS toolbar to operate within an existing open-source GIS package. This proposal targets the "Data Analyzing and Processing Algorithms" research initiative announced by the Goddard Space Flight Center by exploiting spatial tools in order to increase the accessibility, interoperability, and inter-use of HDF-EOS data within the GIS/Geospatial research community.

Anticipated Benefits

We will provide various entities from the national scale to the local scale with improved tools to increase the usability of NASA EOS data in GIS/Geospatial software programs. Some of these entities include: universities, state and federal agencies, private consulting companies, etc. Because the proposed tools are directed at increasing accessibility and facilitating the use of NASA EOS satellite data, essentially anyone who uses or is interested in using satellite imagery are potential end users of our product. We will provide users with information and training on incorporating the HDF-EOS toolbar into their operations/research. The NASA EOS project has produced a tremendous amount of data in HDF-EOS format and these data are in high demand by a broad range of research and application communities. GIS and other geospatial software programs are important tools for analyzing NASA's EOS data. However, most geospatial software programs use different internal formats and are often incapable of ingesting data in HDF-EOS format. Therefore, the development of capability for converting NASA HDF-EOS data into formats compatible with GIS/Geospatial software programs will greatly enhance the interoperability and public use of EOS data. NASA benefits because images collected by their satellites will be more accessible to the GIS community and other geospatial data users. The proposed HDF-EOS toolbar will also represent a significant improvement over the HDF-EOS to GeoTIFF Conversion (HEG) tool, which is currently used by the GIS/Geospatial community.



A GIS Software Toolkit for Converting NASA HDF-EOS Data Products to GIS and Other Geospatial Formats, Phase I

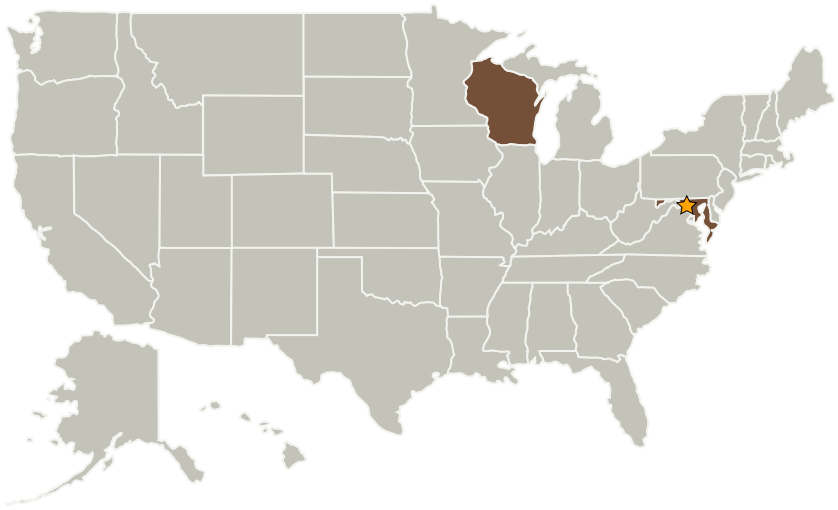
Table of Contents

Small Business Innovation Research/Small Business Tech Transfer

A GIS Software Toolkit for Converting NASA HDF-EOS Data Products to GIS and Other Geospatial Formats, Phase I

Completed Technology Project (2009 - 2009)

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
Aniuk Consulting, LLC	Supporting Organization	Industry	Kenosha, Wisconsin

Primary U.S. Work Locations	
Maryland	Wisconsin

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Project Manager:

Chris S Lynnes

Principal Investigator:

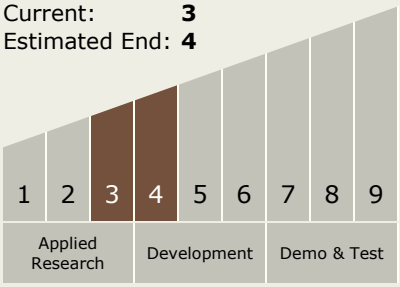
Brian Harshburger

A GIS Software Toolkit for Converting NASA HDF-EOS Data Products to GIS and Other Geospatial Formats, Phase I

Completed Technology Project (2009 - 2009)

Technology Maturity (TRL)

Start: **3**
Current: **3**
Estimated End: **4**



Technology Areas

Primary:

- TX02 Flight Computing and Avionics
  - TX02.2 Avionics Systems and Subsystems
    - TX02.2.6 Data Acquisition Systems